

ASSIST HANDLE ASSEMBLY FOR BEDS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Provisional Patent Application No. 60/450,786, filed on February 28, 2003.

BACKGROUND OF INVENTION

[0002] This invention relates generally to beds and, more particularly, to convalescent beds. Most particularly, the invention relates to an assist handle assembly for use with articulated beds.

[0003] Assist handles are well known. Such handles are typically associated with beds to aid an occupant in entering and exiting the bed. Some assist handles function as guardrails to prevent the bed occupant from falling out of the bed. A popular convalescent bed has a sleep surface frame that can be articulated between elevated and lowered positions. The sleep surface typically includes head, knee and foot sections that can be raised and lowered independently of one another. On such a bed, it is desirable that the assist device be attached to the sleep surface frame so that the device moves with the frame as the surface is articulated.

[0004] What is needed is an assist handle assembly that can easily be retrofit to the sleep surface frame of an existing articulating bed.

SUMMARY OF INVENTION

[0005] The present invention is directed towards an assist handle that can easily be retrofit to the sleep surface frame of an existing articulating bed. The handle comprises an assist handle, a handle mount that is adapted to be supported by the bed for supporting the assist handle for movement relative to the bed, and one or more latch configurations for latching the assist handle in one or more fixed positions relative to the bed.

[0006] Various objects and advantages of this invention will become apparent to those skilled in the art from the following detailed description of the preferred embodiment, when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0007] Fig. 1 is an exploded perspective view of an assist handle assembly according to the present invention.

[0008] Fig. 2 is an enlarged exploded perspective view of a configuration for mounting the assembly shown in Fig. 1.

[0009] Fig. 3 is an assembled perspective view of the mounting configuration shown in Fig. 1.

[0010] Fig. 4 is a sectional view in elevation of the mounting configuration shown in Fig. 3.

[0011] Fig. 5 is a partially cutaway bottom plan view of a configuration for latching the assist handle in a fixed position.

[0012] Fig. 6 is a reduced scale perspective view of the assist handle assembly supported by an articulated bed.

DETAILED DESCRIPTION

[0013] Now with reference to the drawings, there is illustrated in Fig. 1 an assist handle assembly, generally indicated at 10, in accordance with the present invention. The assist handle assembly 10 is adapted to be attached to the frame 84 of an articulated bed 82, as shown in Fig. 6. The assist handle assembly 10 according to the invention includes an assist handle 12 and a handle mount 14 for supporting the assist handle 12 for movement relative to the bed 82. The assist handle assembly 10 further

includes one or more latch configurations 16 for latching the assist handle 12 in one or more fixed positions relative to the bed 82.

[0014] The assist handle 12 may be any form of assist device. However, in accordance with a preferred embodiment of the invention, the assist handle 12 has at least two spaced apart members, wherein a first member 18 and a second member 20 that orbits about the first member 18 when the assist handle 12 is moved relative to the handle mount 14. For example, the assist handle 12 can be in the form of an inverted U-shaped tubular structure, as illustrated in Fig. 1, and the spaced apart members 18, 20 may be defined by legs of the U-shaped structure. Cross members 22, 24 may be provided for improving the rigidity of the assist handle 12 and maintaining the relative positions of the spaced apart members 18, 20. In accordance with the most preferred embodiment of the invention, the assist handle 12 is made of metal and the cross members 22, 24 are welded between the spaced apart members 18, 20 to form a weldment of unitary construction. To provide insulation from the cold metal, a grip 26 can be applied to the assist handle 12. The grip 26 is most preferably applied to the outer surface of the assist handle 12, as shown in Fig. 1.

[0015] The handle mount 14 includes a bracket 28 that is adapted to be supported by the bed 82, most preferably by the sleep surface frame 84 of the bed 82. The bracket 28 has a hole 30 therein for receiving the first member 18 of the assist handle 12. The handle mount 14 may include one or more plates and most preferably includes an upper plate 32 and a lower plate 34 spaced apart from the upper plate 32. The plates 32, 34 have aligning holes 36, 38 therein, as shown more clearly in Figs. 2-4. A generally cylindrical sleeve 40 is supported relative to the handle mount 28. The sleeve 40 has a passage 42 therethrough. The passage 42 has a central axis 44 that is coincident with the central axis 45 of the hole 30. In a preferred embodiment of the invention, the upper plate 32 is stamped with portions thereof folded down to provide radial support of the sleeve 40. The hole 36 in the upper plate 32 is preferably an

irregular-shaped hole and is most preferably defined by at least one flat side, although opposing flat sides 46 are shown, and a curved side, though opposing curved sides 48 are shown. The hole 38 in the lower plate 34 is preferably generally cylindrical in shape. Hence, the sleeve 40 can be inserted in the hole 38 in the lower plate 34 until it engages the upper plate 32 and then is welded or otherwise secured to the handle mount 14.

[0016] The assist handle 12 has a member 50 that is adapted to mate with the hole 30 in the handle mount 14. The mating member 50 can be made of plastic and affixed to the first member 18 of the assist handle 12. The mating member 50 preferably has flats 52 and curved surfaces 54 that correspond to the flat sides 46 and curved sides 48 defining the hole 36 in the upper plate 32. A radially extending generally cylindrical flange 56 is disposed above the mating member 50. A partial annular groove 58 is defined between the curved surfaces 54 and the flange 56. The flange 56 restricts the travel of the first member 18 of the assist handle 12 through the sleeve 40. The annular groove 58 is sized to receive the flat sides 46 defining the hole 36 in the upper plate 32. Upon inserting the mating member 50 in the hole 36 and rotating the assist handle 12, the flat sides 46 are trapped in the annular groove 58 and the curved sides 48 interfere with the flat sides 46 to prevent the mating member 50 from being removed from the hole 36.

[0017] It should be appreciated that the hole 36 and the mating member 50 may be any suitable shape to interlock the assist handle 12 and the handle mount 14. Although the interlocking structure is preferred, it should be understood by those of ordinary skill in the art of the invention that the hole 36 and mating member 50 can be generally cylindrical or some other shape that does not result in an interlocking relationship therebetween.

[0018] The second member 20 of the assist handle 12 is adapted to cooperate with the latch configurations 16 to latch the assist handle 12 in one or more fixed positions.

The latch configuration 16 can be any suitable latch device. For example, the latch configuration 16 can include a receiver 60 for receiving the second member 20, as shown in Fig. 5. A detent or hole 62 may be provided proximate the receiver 60. The second member 20 can be provided with a locking pin 64 that is releasably engageable with the hole 62 to hold the second member 20 in the receiver 60. In a preferred embodiment of the invention, the latch configuration 16 has a ramp or cam surface 66 upon which the pin 64 engages as the second member 20 of the assist handle 12 enters the receiver 60. As the pin 64 engages the cam surface 66, the pin 64 is urged in a first direction, or toward the first member 18 of the assist handle 12 (i.e., to the left when viewing Fig. 5). In a preferred embodiment of the invention, the pin 64 has a ball end 68 to encourage a smooth engagement between the pin 64 and the cam surface 66. The hole 62 for receiving the pin 64 is adjacent the highest portion of the cam surface 66. When the second member 20 of the assist handle 12 completely enters the receiver 60, the pin 64 passes the highest portion of the cam surface 66 and plunges into the hole 62 (i.e., to the right when viewing Fig. 5). The pin 64 is preferably urged into the hole 62 by a spring 70, as shown in Fig. 5. The spring 70 is located inside the second member 20 of the assist handle 12 between a stop member, such as the E-clip 72 shown, and an inner surface of the second member 20. To unlatch the assist handle 12, the pin 64 is withdrawn from the hole 62 merely by pulling the pin 64 in a direction opposite the force of the spring 70 (i.e., to the left when viewing Fig. 5). To aid in pulling the pin 64, a knob 74 can be provided on the pin 64 opposite the ball end 68.

[0019] In a preferred embodiment of the invention, the latch configurations 16 are made of a rigid plastic, preferably by injection molding. The latch configurations 16 have a back side, which preferably has a threaded hole 76 therein and a tab 78 extending therefrom. A threaded member 79 engages the threaded hole 76 to secure the latch configuration 16 to a supporting surface. The tab 78 prevents the latch configuration 16 from pivoting on the threaded member 79.

[0020] The handle mount 14 is preferably secured to a mounting channel 80 with a latch configuration 16 disposed on the channel 80 at opposing sides of the mount 14, as shown in Fig. 6. The assist handle 12 is adapted to pivot or rotate about the first member 18 thereof. The assist handle 12 pivots in a first direction (i.e., clockwise when viewing Fig. 6) to engage a first latch configuration 16 in a first position, as shown in Fig. 6, and about 180-degrees from the first position in a second direction (i.e., counter-clockwise when viewing Fig. 6) to engage a second latch configuration 16' in a second position. In the first position, toward the foot end 86 of the bed 82, the assist handle 12 functions as an assist device. In the second position, toward the head end 88 of the bed 82, the assist handle 12 is out of the way to permit an occupant to enter and exit the bed 82 with relative ease. The channel 80 is adapted to be mounted to the frame of the bed 82, most particularly to the sleep surface frame 84, as illustrated in Fig. 6.

[0021] The principle and mode of operation of this invention have been explained and illustrated in its preferred embodiment. However, it must be understood that this invention may be practiced otherwise than as specifically explained and illustrated without departing from its spirit or scope.